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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2012 Air Force **DATE:** February 2011

<b>APPROPRIATION/BUDGET ACTIVITY</b>				<b>R-1 ITEM NOMENCLATURE</b>							
3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				PE 0401134F: <i>Large Aircraft InfraRed Counter Measures (LAIRCM)</i>							
<b>COST (\$ in Millions)</b>	<b>FY 2010</b>	<b>FY 2011</b>	<b>FY 2012 Base</b>	<b>FY 2012 OCO</b>	<b>FY 2012 Total</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
Total Program Element	25.700	17.227	7.438	-	7.438	7.759	5.825	5.906	6.010	Continuing	Continuing
674942: <i>Large Aircraft Infrared Counter Measures (LAIRCM)</i>	25.700	17.227	7.438	-	7.438	7.759	5.825	5.906	6.010	Continuing	Continuing

**Note**  
The Prior Years Funding estimate is \$362.8M. The To-Complete funding estimate is \$50.4M.

**A. Mission Description and Budget Item Justification**

Totals include funding for Program Resources Collection Process (PRCP) Program Number 357, Large Aircraft Infrared Countermeasures (LAIRCM) - ACAT 1C

The program funding includes reductions for overhead efficiencies that are not intended to impact program content. The efficiencies reductions total \$0.097M in FY12.

The Large Aircraft Infrared Countermeasures (LAIRCM) system is an evolutionary acquisition program that provides significantly improved defensive systems capability for DoD aircraft to counter the infrared (IR) Man-Portable Air-Defense Systems (MANPADS) missile threat. The current LAIRCM system configuration [AN/AAQ-24V] consists of an ultra-violet missile warning sensor (MWS), a laser transmitter assembly, control interface unit (CIU) and processors to detect, track, jam and counter incoming IR missiles. The number of sensors and turrets per aircraft is determined by the size and signature of the aircraft. The system is fully automatic following system power-up. LAIRCM requirements are documented in the multi-command Operational Requirements Document (ORD) – LAIRCM ORD 314-92, validated on 03 Aug 98. The system was first fielded on the C-17 aircraft.

The baseline program development is complete and consists of the small laser transmitter assembly (SLTA), ultra-violet MWS, processor, control interface unit (CIU) and a repeater (on some aircraft) to meet the need for advanced IR countermeasures. The Guardian Laser Transmitter Assembly (GLTA) is an upgrade to the baseline transmitter equipment. First production GLTA delivery occurred in June 08.

Development of the Next Generation Missile Warning System (NexGen MWS) is new hardware that improves capability. Baseline equipment (ultra-violet MWS) will be retrofitted with the NexGen MWS as it becomes available. DT/OT was conducted in FY10 with IOT&E in FY11.

LAIRCM upgrades – This includes continuous hardware and software upgrades and testing of the LAIRCM system to maintain concurrency with new and emerging threats. These upgrades include, but are not limited to capability, hardware and/or software, upgrades to current LAIRCM line replaceable units (LRUs) for capabilities like engagement reporting (ER), Closed Loop Infrared Countermeasures (CLIRCM) and other emerging capabilities to upgrade/update system threat defeating ability. It also includes development/integration of new LRUs/LRU variants into the current LAIRCM system based on emerging technology and upgrades to the capability of LAIRCM support/test equipment.

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<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0401134F: <i>Large Aircraft InfraRed Counter Measures (LAIRCM)</i>
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Group A integration and testing as well as integration support to incorporate LAIRCM on new platforms (including C-130J and multiple potential C-130 variants) as defined by AMC and AFSOC, multiple potential tanker aircraft variants as defined by AMC, and other federal agency requirements as directed by DoD will be accomplished.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

<b>B. Program Change Summary (\$ in Millions)</b>	<b><u>FY 2010</u></b>	<b><u>FY 2011</u></b>	<b><u>FY 2012 Base</u></b>	<b><u>FY 2012 OCO</u></b>	<b><u>FY 2012 Total</u></b>
Previous President's Budget	26.784	17.227	7.535	-	7.535
Current President's Budget	25.700	17.227	7.438	-	7.438
Total Adjustments	-1.084	-	-0.097	-	-0.097
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-1.084	-	-0.097	-	-0.097

**Change Summary Explanation**

FY10: -\$1.084M adjustment

(1) -\$0.112 Congressional General Reduction

(2) -\$0.972 Small Business Innovation Research (SBIR) adjustment

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force									DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development				R-1 ITEM NOMENCLATURE PE 0401134F: Large Aircraft InfraRed Counter Measures (LAIRCM)				PROJECT 674942: Large Aircraft Infrared Counter Measures (LAIRCM)			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
674942: Large Aircraft Infrared Counter Measures (LAIRCM)	25.700	17.227	7.438	-	7.438	7.759	5.825	5.906	6.010	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

**Note**  
The Prior Years Funding estimate is \$362.8M. The To-Complete funding estimate is \$50.4M

**A. Mission Description and Budget Item Justification**

Totals include funding for Program Resources Collection Process (PRCP) Program Number 357, Large Aircraft Infrared Countermeasures (LAIRCM) - ACAT 1C

The program funding includes reductions for overhead efficiencies that are not intended to impact program content. The efficiencies reductions total \$0.097M in FY12.

The Large Aircraft Infrared Countermeasures (LAIRCM) system is an evolutionary acquisition program that provides significantly improved defensive systems capability for DoD aircraft to counter the infrared (IR) Man-Portable Air-Defense Systems (MANPADS) missile threat. The current LAIRCM system configuration [AN/AAQ-24V] consists of an ultra-violet missile warning sensor (MWS), a laser transmitter assembly, control interface unit (CIU) and processors to detect, track, jam and counter incoming IR missiles. The number of sensors and turrets per aircraft is determined by the size and signature of the aircraft. The system is fully automatic following system power-up. LAIRCM requirements are documented in the multi-command Operational Requirements Document (ORD) – LAIRCM ORD 314-92, validated on 03 Aug 98. The system was first fielded on the C-17 aircraft.

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LAIRCM upgrades – This includes continuous hardware and software upgrades and testing of the LAIRCM system to maintain concurrency with new and emerging threats. These upgrades include, but are not limited to capability, hardware and/or software, upgrades to current LAIRCM line replaceable units (LRUs) for capabilities like engagement reporting (ER), Closed Loop Infrared Countermeasures (CLIRCM) and other emerging capabilities to upgrade/update system threat defeating ability. It also includes development/integration of new LRUs/LRU variants into the current LAIRCM system based on emerging technology and upgrades to the capability of LAIRCM support/test equipment.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011				
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development		R-1 ITEM NOMENCLATURE PE 0401134F: Large Aircraft InfraRed Counter Measures (LAIRCM)	PROJECT 674942: Large Aircraft Infrared Counter Measures (LAIRCM)				
Group A integration and testing as well as integration support to incorporate LAIRCM on new platforms (including C-130J and multiple potential C-130 variants) as defined by AMC and AFSOC, multiple potential tanker aircraft variants as defined by AMC, and other federal agency requirements as directed by DoD will be accomplished.							
This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.							
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: LAIRCM Development			25.700	17.227	7.438	-	7.438
Description: Continue integration of LAIRCM system onto new aircraft (a/c) for AMC & AFSOC customers.							
FY 2010 Accomplishments: Continuing LAIRCM integration program onto AMC C-130J. Continue planning/study of multiple AFSOC EC-130J variants and LAIRCM integration, including some trial installation and flight test h/w procurements due to changing user requirements. Identify/study potential new technologies for new/future line replaceable unit (LRU)/shop replaceable units (SRUs) to be added to the system. Continue hardware (h/w) and software (s/w) upgrade program of current LAIRCM system equipment to new s/w architecture including additional Engagement Reporting capability. Continue recurring jam code development and testing program.							
FY 2011 Plans: Complete LAIRCM integration program onto AMC C-130J. Re-start study/integration of LAIRCM onto AFSOC AC-130U, initiated with FY09 Congressional Add funding. Continue planning/study/integration of additional AFSOC EC-130J variants, including some trial installation and flight test h/w procurements. Begin development/integration of potential new technologies for new/future LRU/SRUs to be added to the system. Begin development of Future Infrared Countermeasures (FIRCM) capabilities. Continue h/w and s/w upgrade program for current LAIRCM system equipment to new s/w architecture, including additional Engagement Reporting capability. Continue recurring jam code development and testing program.							
FY 2012 Base Plans: Complete AFSOC AC-130U and additional AFSOC EC-130J variants. Continue development/integration of potential new technologies for new/future LRU/SRUs to be added to the system. Continue development of Future Infrared Countermeasures (FIRCM) capabilities. Continue h/w and s/w upgrade program for current LAIRCM system equipment to new s/w architecture, including additional Engagement Reporting capability. Continue recurring jam code development and testing program.							
FY 2012 OCO Plans:							

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force									DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development			R-1 ITEM NOMENCLATURE PE 0401134F: Large Aircraft InfraRed Counter Measures (LAIRCM)			PROJECT 674942: Large Aircraft Infrared Counter Measures (LAIRCM)					
B. Accomplishments/Planned Programs (\$ in Millions)						FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	
Accomplishments/Planned Programs Subtotals						25.700	17.227	7.438	-	7.438	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0401134F: APAF, C-17	267.937	282.959	32.672	0.000	32.672	113.203	118.769	119.143	119.789	Continuing	Continuing
• PE 0401134F (1): APAF, C-130	120.433	133.019	0.000	154.841	154.841	0.000	0.000	0.000	0.000	Continuing	Continuing
• PE 0401134F (2): APAF, C-5	66.823	78.522	3.190	59.299	62.489	3.147	5.239	5.312	5.377	Continuing	Continuing
• PE 0401134F (3): APAF, C-130J	0.000	55.339	17.428	27.983	45.411	8.285	8.447	8.603	8.707	Continuing	Continuing
• PE 0401134F (4): APAF, HC/ MC-130 Recap	0.000	0.000	0.000	34.000	34.000	0.000	0.000	0.000	0.000	Continuing	Continuing
D. Acquisition Strategy											
Aircraft integration contracts award to aircraft prime contractor with separate integration support contract awarded to Northrop Grumman Corporation (Rolling Meadows). IR countermeasure upgrades awarded as modifications under the LAIRCM production contract.											
E. Performance Metrics											
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force										DATE: February 2011				
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development				R-1 ITEM NOMENCLATURE PE 0401134F: Large Aircraft InfraRed Counter Measures (LAIRCM)				PROJECT 674942: Large Aircraft Infrared Counter Measures (LAIRCM)						
Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
EC-130J Integration	SS/CPFF	Northrop Grumman:Rolling Meadows, IL	1.791	3.132	Jun 2011	-		-		-	0.000	4.923	0.000	
AC-130U Integration	SS/CPFF	Northrop Grumman:Rolling Meadows, IL	2.893	3.086	May 2011	1.932	Jan 2012	-		1.932	0.000	7.911	0.000	
C-130J Development & Integration	SS/CPAF	Lockheed Martin:Marietta, GA	19.840	4.544	Dec 2010	-		-		-	0.000	24.384	0.000	
LAIRCM Hardware and Software upgrades	SS/CPFF	Northrop Grumman:Rolling Meadows, IL	8.114	3.251	Feb 2011	1.462	Nov 2011	-		1.462	Continuing	Continuing	0.000	
Subtotal			32.638	14.013		3.394		-		3.394			0.000	
Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
A/C Survivability Division (Program Office)	Various	Various:Various,	0.507	0.217		0.164		-		0.164	Continuing	Continuing	0.000	
Subtotal			0.507	0.217		0.164		-		0.164			0.000	
Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Various Gov't Test Organizations	Various	Various:Various,	5.300	2.997		3.880		-		3.880	Continuing	Continuing	0.000	
Subtotal			5.300	2.997		3.880		-		3.880			0.000	

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2012 Air Force											<b>DATE:</b> February 2011		
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<b>Management Services (\$ in Millions)</b>				<b>FY 2011</b>		<b>FY 2012 Base</b>		<b>FY 2012 OCO</b>		<b>FY 2012 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Total Prior Years Cost</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Subtotal</b>			-	-		-		-		-	0.000	0.000	0.000

  

	<b>Total Prior Years Cost</b>	<b>FY 2011</b>		<b>FY 2012 Base</b>		<b>FY 2012 OCO</b>		<b>FY 2012 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Project Cost Totals</b>	38.445	17.227		7.438		-		7.438			0.000

  

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2012 Air Force		<b>DATE:</b> February 2011
<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0401134F: <i>Large Aircraft InfraRed Counter Measures (LAIRCM)</i>	<b>PROJECT</b> 674942: <i>Large Aircraft Infrared Counter Measures (LAIRCM)</i>

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2012 Air Force			<b>DATE:</b> February 2011
<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0401134F: <i>Large Aircraft InfraRed Counter Measures (LAIRCM)</i>	<b>PROJECT</b> 674942: <i>Large Aircraft Infrared Counter Measures (LAIRCM)</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Hardware & Software Upgrades	1	2010	4	2016
NexGen MWS IOT&E	3	2011	4	2011
NexGen MWS Full Rate Production Decision	1	2012	1	2012
C-130J Integration	1	2010	2	2011
EC-130J Integration	2	2010	4	2011
AC-130U Integration	4	2010	2	2012

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